

Problem Set 2-3



Reading Analysis

From what you have read in this section, what do you consider to be the main idea? How is the add-add property of linear functions consistent with the concept of slope? How do the properties of exponential and power functions differ? If you triple the diameter of a circle, what effect does this have on the circle's area? What type of function has this property? What numerical pattern do quadratic functions have?



Quick Review

- Q1. Write the general equation of a linear function.
- Q2. Write the general equation of a power function.
- Q3. Write the general equation of an exponential function.
- Q4. Write the general equation of a quadratic function.
- Q5. $f(x) = 3 \cdot x^5$ is the equation of a particular function.
- Q6. $f(x) = 3 \cdot 5^x$ is the equation of a particular function.
- Q7. Name the transformation of $f(x)$ that gives $g(x) = 4 \cdot f(x)$.
- Q8. The function $g(x) = 3 + 4 \cdot f(5(x - 6))$ is a vertical dilation of function f by a factor of
A. 3 B. 4 C. 5 D. 6 E. -6
- Q9. Sketch the graph of a linear function with negative slope and positive y -intercept.
- Q10. Sketch the graph of an exponential function with base greater than 1.

For Problems 1–12, determine whether the data have the add-add, add-multiply, multiply-multiply, or constant-second-differences pattern. Identify the type of function that has the pattern.

1.

x	$f(x)$
2	2700
4	2400
6	2100
8	1800
10	1500

2.

x	$f(x)$
2	1500
4	750
6	500
8	375
10	300

3.

x	$f(x)$
2	12
4	48
6	108
8	192
10	300

4.

x	$f(x)$
2	12
4	48
6	192
8	768
10	3072

5.

x	$f(x)$
2	26
4	52
6	78
8	104
10	130

6.

x	$f(x)$
2	4.6
4	6.0
6	7.4
8	8.8
10	10.2

7.

x	$f(x)$
2	1800
4	450
6	200
8	112.5
10	72

8.

x	$f(x)$
2	400
4	100
6	-200
8	-500
10	-800

9.

x	$f(x)$
2	900
4	100
6	11.1111...
8	1.2345...
10	0.1371...

10.

x	$f(x)$
2	5.6
4	44.8
6	151.2
8	358.4
10	700.0